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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/004,123	12/06/2001	Laurent Colantonio	DN2001202USA	8043

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EXAMINER
FISCHER, JUSTIN R

ART UNIT	PAPER NUMBER
1733	4

DATE MAILED: 07/08/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/004,123	COLANTONIO ET AL.	
	Examin r	Art Unit	
	Justin R Fischer	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 December 2001* .

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____ .

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) *2,3* .
4) ☐ Interview Summary (PTO-413) Paper No(s). _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 4-8, 10-12, 14, 16, 18, and 19 are rejected under 35 U.S.C. 102(b) as being anticipated by Willard, Jr. (US 5,427,166). As best depicted in Figures 1 and 4, Willard, Jr. teaches a pneumatic tire construction having a chafer 34 and a chafer reinforcement fabric 27, wherein said chafer reinforcing fabric is positioned at a surface where the chafer contacts the wheel rim flange (emphasis on Figure 4). While it is recognized that Figure 4 of Willard, Jr. depicts an underinflated condition, the claims fail to require that the chafer reinforcement fabric contact the rim flange during normal running.

Regarding claims 4, 5, 12, and 14, Figures 1 and 4 depict the chafer reinforcing fabric as extending axially inward of the chafer 34 and along the surfaces of the bead toe and the bead base.

With respect to claims 6-8, 10, 16, and 18, Willard, Jr. discloses the chafer reinforcing fabric 27 as being a square woven fabric in which non-metallic fibers, such as aramid, rayon, and nylon, are individually inclined at angles of ± 45 degrees, such that the weaving angles are approximately 90 degrees. One of ordinary skill in the art at

the time of the invention would have recognized that said fabric is a rubber impregnated fabric.

Regarding claim 19, the chafer reinforcing fabric of Willard, Jr. is formed in accordance to the limitations of the claimed invention, particularly the chafer reinforcing fabric is formed of oriented fibers and is disposed at the surface of the chafer and the rim flange.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-14 and 16-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Admitted Prior Art (Figure 1 and Pages 9 and 10) in view of Willard, Jr. and optionally in view of Nakasaki (US 4,121,641) and Sato (JP 02154026). Figure 1 of the Admitted Prior Art (APA) discloses a pneumatic tire having one or more carcass plies 104 between two inextensible beads 102 adapted for mounting on a wheel rim 120 having a rim flange on each axial side of the tire, wherein a chafer rubber component 136 (chafer) is disclosed in the bead area and directly contacts the surface of said rim flange (indicated at reference character 135). Figure 1 further depicts the inclusion of a toe guard or reinforcement layer 116 (analogous to chafer reinforcement fabric of claimed invention) that is disposed at the tire/rim interface in the axially inner and radially inner (reference point being the bead core) bead portions. However, the

reference fails to suggest the extension of the reinforcement layer along the surface where the chafer contacts the rim flange. One of ordinary skill in the art at the time of the invention would have found it obvious to extend the reinforcement layer of the Admitted Prior Art along the contact surface (between chafer and rim flange) since it is well known that such an arrangement provides the benefits of improved mounting, abrasion resistance, and rigidity (stiffness). For example, Willard, Jr. (Figures 1 and 4) discloses a similar tire construction in which a rim seat ply 27 or chafer reinforcing fabric is disposed over the entire contacting region between the bead rubber layers (26, 28, and 34) and the rim, such that the engagement between the tire and the rim is optimized (Column 9, Lines 30-48). Nakasaki and Sato are optionally applied to further evidence the well known use of chafer reinforcing layers for the benefits of improved abrasion resistance, crack resistance, and heat buildup properties (results from frictional contact), wherein Nakasaki (Column 4, Lines 22-31) specifically discloses the extension of a chafer reinforcing layer between the bead rubber layers and the rim over the axial extent of the rim flange (reduces wear in bead rubber layers). Thus, it is recognized in view of the prior art references noted above that it is desired to prevent direct contact between a bead rubber layer, such as a chafer having abrasion resistant characteristics, and a rim flange and as such, one of ordinary skill in the art at the time of the invention would have been motivated to dispose the toeguard or chafer reinforcing layer 116 of the Admitted Prior Art over the entire extent of the chafer/rim interface.

Regarding claims 4, 12, and 13, Figure 1 of APA depicts the toeguard of reinforcing layer 116 as extending along the surfaces of the bead toe and the bead base.

With respect to claims 5 and 14, as best depicted in Figure 1 of APA, the toeguard of reinforcing layer 116 (analogous to chafer reinforcement fabric of claimed invention) extends axially inward form the chafer and radially inward of and around the bead.

Regarding claims 6-8 and 16, while the APA is silent with respect to the material of the toeguard or reinforcement layer 116, one of ordinary skill in the art at the time of the invention would have recognized the well known and conventional makeup of said layer required by the claimed invention. Willard, Jr. provides one example of a chafer reinforcing fabric that is formed as a square woven fabric such that the fibers are woven at an angle of approximately 90 degrees and individually inclined at an angle of 45 degrees with respect to the radial plane (Column 9, Lines 40-48). Furthermore, in describing the materials, Willard, Jr. suggests the use of a plurality of non-metallic or textile materials, including aramid fiber, polyester, rayon, and nylon.

With respect to claims 9 and 17, monofilaments and mutlifilaments are extensively used in the formation of such fabric reinforcing layers; in particular, monofilament fibers are commonly employed as warp elements in such fabric reinforcing layers. Thus, one of ordinary skill in the art at the time of the invention would have readily appreciated the use of monofilament fibers for the chafer reinforcing fabric in the tire of APA in view of Willard, Jr. and optionally in view of Nakasaki and Sato,

there being no evidence of any unexpected results to establish a criticality for the use of monofilaments fibers.

Regarding claims 10 and 18, it is recognized in the tire industry that these fabric reinforcing layers are primarily rubber-impregnated fabrics.

With respect to claims 19 and 20, the chafer reinforcing fabric of the APA in view of Willard, Jr. and optionally in view of Nakasaki and Sato, is formed in accordance to the limitations of the claimed invention, particularly the chafer reinforcing fabric is formed of oriented fibers and is disposed at the surface of the chafer and the rim flange. In addition, the chafer reinforcing fabric, as stated above, surrounds the bead region and exists over the entire contacting surface between the tire and the rim.

5. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over the APA, Willard, Jr., Nakasaki, and Sato as applied in claim 1 above and further in view of Arakawa (US 6,286,576). In describing the chafer reinforcing fabric (or toeguard), the APA is completely silent as to the materials used. In any event, one of ordinary skill in the art at the time of the invention would have found it obvious to form the reinforcing fabric from non-metallic cords since such a construction is extensively used in the manufacture of similar chafer reinforcing fabrics, as show for example by Arakawa (Column 6, Lines 8-13). While the chafer reinforcing fabric is not disposed over the entire contacting surface of the tire/rim, the reference generally recognizes the well known use of non-metallic cords in the manufacture of chafer reinforcing fabrics and as such, one of ordinary skill in the art at the time of the invention would have readily appreciated the use of non-metallic cords in the chafer reinforcing fabric of APA in view

of Willard, Jr. and optionally in view of Nakasaki and Sato. Lastly, applicant has not provided any unexpected results to establish a criticality for the specific use of non-metallic cords in the chafer reinforcing fabric.

6. Claims 9 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Willard, Jr. and further in view of Schmidt (US 3,902,356). Willard, Jr. discloses a runflat, pneumatic tire construction in which a chafer reinforcing fabric is disposed between a chafer rubber and a rim flange. In describing said chafer reinforcing fabric, Willard, Jr. suggests that said fabric is a square woven fabric formed of textile materials. While the reference fails to expressly suggest the use of monofilament fibers, one of ordinary skill in the art at the time of the invention would have readily appreciated and expected the square woven fabric of Willard, Jr. to be formed of monofilament fibers since such fibers are extensively used, particularly as warp elements, in the formation of square woven fabric components, as shown for example by Schmidt (Column 2, Lines 50-58). As such, it would have been obvious to one of ordinary skill in the art at the time of the invention to form the square woven fabric of Willard, Jr. from monofilament fibers, there being no evidence of unexpected results to establish a criticality for such a construction.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Justin Fischer

July 1, 2003

Michael W. Ball
Supervisory Patent Examiner
Technology Center 1700